

The Colombian Species of the Genus *Diabrotica*, with Descriptions of those hitherto uncharacterized.—Part I. By JOSEPH S. BALY, F.L.S.

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IN the following paper I have endeavoured to collect together all the species of *Diabrotica* known to me as having been found in Colombia and Venezuela; a large number of those here described were collected by the late H. Steinheil, who some years since placed his collection of *Galerucinæ* in my hands for determination. The descriptions of his insects, although written at the time, were laid on one side, and from various causes their publication has been delayed up to the present time.

It will be seen that I have divided the genus into two principal sections, dependent on the relative lengths of the second and third joints of the antennæ.

#### Genus *DIABROTICA*.

##### SECTION I.

Second and third joints of antennæ short, nearly equal in length, the third in some species being rather longer than the second, the fourth as long or longer than the preceding two united.

A. Elytra black or metallic green, with large, round, fulvous spots.

1. *DIABROTICA REGALIS*, Baly, *Annals & Mag. Nat. Hist.* Oct. 1859, p. 270.

Var. A. Elytris a basi ad pone medium fulvis.

*Hab.* Coper, Muzo: coll. Steinheil. Colombia, without precise locality: my collection. Var. A. Cayenne: my collection.

2. *DIABROTICA ELEGANTULA*. Subelongata, postice paullo ampliata, flava, nitida; capite, scutello, metapectore, tibiis tarsisque nigris; antennarum articulis nono ad undecimum (hujus apice excepto) albidis; thorace subquadrato, rufo-testaceo, disco bifoveolato; elytris crebre punctatis, infra humeros longitudinaliter sulcatis; viridi-æneis, utrisque macula infra basin, fascia prope medium, sæpe utrinque abbreviata, apice limboque laterali, flavis. Long. 3-3½ lin.

*Hab.* Magdalena River: my collection. Muzo, Sta. Carlos, Coper: collection of H. Steinheil.

Head not longer than broad, triangular; front impressed with a deep fovea; surface of clypeus slightly irregular, carina not defined; antennæ filiform, second and third joints short, the latter slightly longer than the second, the fourth as long as the preceding two united. Thorax subquadrate; sides parallel from the base to beyond the middle, slightly converging at the apex; the anterior angles obtuse, the hinder ones acute; disk smooth and shining, impressed on either side with a shallow fovea. Elytra narrowly oblong, increasing in width from the base towards the middle, closely punctured, faintly sulcate longitudinally below the humeral callus.

In one specimen from the Magdalena River the transverse fascia, which varies greatly in extent in different individuals, is reduced to a small round spot.

3. *DIABROTICA CONSENTANEA*. Subelongata, postice paullo ampliata, nigra, nitida; antennarum articulis nono et decimo albidis; femoribus basi, abdomine thoraceque flavis, hoc lævi, disco ante basin deplanato; elytris obsolete rugoso-punctatis, utrisque limbo laterali, ad apicem abbreviato, fascia vix pone medium, utrinque abbreviata, maculisque tribus, duabus infra basin transversim positis, tertia ante apicem, prasinis. Long.  $3\frac{1}{2}$ –4 lin.

Var. A. Elytris ante medium totis prasinis.

*Hab.* Muzo, Coper. Var. A: my collection.

Front impressed with a deep fovea; antennæ filiform, the second joint short, the third slightly longer than the second, the fourth equal in length to the preceding two; the ninth and tenth obscure white, stained at their apices with dark fuscous. Thorax about one fourth broader than long; sides nearly parallel and slightly sinuate from the base to just beyond the middle (where they are obtusely angled), thence obliquely converging to the apex, the anterior angles slightly excurved, obtuse, the hinder ones acute; above smooth and shining, the middle disk at its base flattened and faintly depressed. Elytra narrowly oblong, very slightly dilated from the base towards the apex; nitidous, irregularly punctured, the interspaces granulose-punctate; each elytron with the narrow outer limb, abbreviated near the apex, two spots some distance below the base (the first, rotundate, near the suture, the second small, also rotundate, placed close to the lateral limb, but slightly below the first one), an irregular medial transverse band, abbreviated at the suture and the lateral margin, and,

lastly, a subrotundate spot halfway between the middle and the apex, pale grassy green.

In var. A the transverse fascia is replaced by a rotundate spot.

4. *DIABROTICA GRATIOSA*. Subelongata, postice paullo ampliata, fulva, nitida; metasterno, tibiis, tarsis, scutello capiteque nigris; antennis basi piceis, articulis 9-10 albidis; thorace subquadrato, lævi, rufotestaceo; elytris sat crebre, evidenter punctatis, infra basin leviter excavatis; cyaneis, limbo laterali, apice ampliata, fascia lata vix pone medium et utrinque macula rotundata ante medium, flavis. Long. 3 lin.

Var. A. Elytris pone medium flavis, et fascia obliqua, utrinque abbreviata, cyanea instructis; macula flava ante medium obsoleta.

*Hab.* Type, Sta. Carlos: coll. Steinheil. Var. A, Colombia: my collection.

Head not longer than broad, triangular; front impressed with a deep oblong fovea, which extends downwards between the encarpæ, the latter subpyriform, not distinctly separated from the front; carina raised, narrowly wedge-shaped; antennæ filiform, the second and third joints short, equal, the fourth as long as the preceding two; the three lower joints piceous, the ninth and tenth white. Thorax scarcely broader than long; sides straight and parallel from the base to beyond the middle, thence converging to the apex; surface smooth, impunctate. Elytra broader than the thorax, narrowly oblong-ovate, dilated posteriorly; convex, slightly excavated below the basilar space, rather closely and distinctly punctured.

B. Elytra castaneous or rufo-castaneous, their apices nigro-æneous, coarsely rugose; epipleura clothed with bright yellow hairs.

5. *DIABROTICA CHRYSOPLEURA*, *Harold, Col. Hefte*, xiii. 1875, p. 92.

*Hab.* Sta. Martha, Magdalena River: my collection. La Uga: coll. Steinheil.

All the specimens that I have seen of this species have the elytra rufo-castaneous, with the extreme outer disk and the apices nigro-æneous.

C. Elytra yellow, with small black spots or vittæ.

6. *DIABROTICA HISTRIONICA*. Subelongata, postice ampliata, pallide flavo-fulva; metasterno, scutello capiteque (antennis exceptis) nigris; thorace subquadrato, lævi, bifoveolato, rufo-piceo, fulvo marginato;

elytris tenuiter punctatis, flavis, maculis 11—3 basi, harum una communi, 4 ante medium et 4 inter medium et apicem positis, nigris ornatis; fascia male definita vix pone medium, interdum interrupta, maculaque apicali suffusa pallide rufo-piceis. Long. 3 lin.

Var. A. Thorace pallide, elytrorum signaturis rufo-piceis obsoletis.

*Hab.* Colombia: my collection. Var. A. Oceana: coll. Steinhil.

Head not longer than broad; front impressed above the encarpæ with a deep fovea; encarpæ thickened, contiguous; carina raised, very narrowly wedge-shaped; antennæ filiform, entirely fulvous; the second and third joints very short, nearly equal, the fourth as long as the two preceding united. Thorax rather broader than long; sides rather broadly margined, parallel and sinuate from the base to beyond the middle, thence converging to the apex, all the angles produced, subacute; disk moderately convex, bifoveolate, shining, impunctate, more or less stained with rufo-piceous, in highly coloured specimens the entire disk being piceous, with the limb obscure fulvous. Elytra broader than the thorax, dilated posteriorly, convex, rather closely and distinctly punctured, pale yellow, marked with eleven bluish-black spots: of these three are larger than the rest and subquadrate, placed at the base—one on either elytron covering the humeral callus, and a third common, surrounding the scutellum; the eight others form two slightly curved transverse rows, one just before the middle, the other halfway between the middle and the apex; the rufo-piceous markings vary greatly in extent, and are sometimes entirely wanting

7. *DIABROTICA SPILOTA*. Subelongata, postice paullo ampliata, flavo-fulva, nitida; pectore capiteque (antennis exceptis) nigris; thorace rufo-fulvo, lævi, disco non foveolato; elytris minute sat crebre punctatis, flavis, maculis 11—3, 4, 4—ut in *D. histrionica* dispositis, cæruleo-nigris aut nigris. Long. 3 lin.

Var. A. Elytrorum macula basali communi obsoleta.

*Hab.* Venezuela, Mexico, and Oceana (*Landolt*).

Very similar in coloration and in the pattern of its elytra to *D. histrionica*; its thorax is smooth and impunctate; the discoidal foveæ, present in the former species, are obsolete; the rufo-fulvous markings on the elytra are rarely wanting.

8. *DIABROTICA NIGRONOTATA*. Ovata, postice ampliata, valde convexa, flava, nitida; tibiis, tarsis, metasterno, scutello capiteque nigris; antennis pallide piceis; thorace quam longiore vix latiori, convexo,

nitido; elytris oblongis, apicem versus paullo ampliatis, convexis, subcrebre punctatis, maculis 15 (3, 4, 4, 4 transversim dispositis) nigris, ornatis. Long. 4 lin.

*Hab.* La Luzula; also Ecuador.

Head distinctly longer than broad, subtriangular, nearly impunctate; antennæ slender, the second and third joints very short, nearly equal, the fourth joint slightly longer than the preceding two united. Thorax scarcely longer than broad; sides nearly parallel, converging near the apex, sinuate from the base to beyond the middle; above transversely convex, subconic near the apex, smooth, impunctate. Elytra convex, distinctly but not closely punctured, marked with fifteen large black spots, arranged in four transverse rows—three at the base, the middle one common, four just before and four immediately behind the middle, and, lastly, four midway between the last row and the apex; this row is sometimes obsolete.

9. *DIABROTICA DYSONI*. Elongato-ovata, postice vix ampliata, convexa, flava, nitida, metapectore capiteque nigris; antennarum articulis antepenultimo et penultimo fulvis, labio piceo, mesosterno, scutello thoraceque rufo-fulvis. piceo tinctis; thorace laevi, leviter bifoveolato; elytris distincte sed tenuiter punctatis; vittis tribus, a basi fere ad medium extensis, vitta media communi et utrisque maculis oblongis duabus pone medium positis, cyaneo-nigris. Long. 3 lin.

*Hab.* Colombia (*Dyson*).

Head not broader than long; antennæ filiform, the second and third joints short, the latter scarcely one half longer than the second, fourth joint as long as the preceding two united. Thorax one half broader than long; sides parallel and sinuate from the base to beyond the middle, thence obliquely converging to the apex; disk transversely convex; middle disk flattened, obsoletely bifoveolate. Elytra oblong, very slightly increasing in width posteriorly, convex, faintly depressed near the suture below the basilar space, finely but distinctly punctured; surface with three nigro-cyaneous vittæ, placed transversely at the base and extending nearly to the apex, the middle one sutural, common, the lateral ones covering the humeral calli; in addition, placed transversely on the hinder disk of each elytron, are two similarly coloured patches, the inner one oblong, the outer elongate.

This insect may be known from any of the similarly coloured species by the short third joint of the antenna.

**D. Elytra flavous, narrowly margined with black.**

10. *DIABROTICA LIMBELLA*. Ovata, postice ampliata, convexa, flavo-fulva, nitida; pectore, pedibus (femoribus basi exceptis), scutello capiteque nigris; antennis basi piceis, articulis tribus ultimis sordide albidis; thorace lævi, dorso non foveolato; elytris subcrebre punctatis, anguste nigro limbatis. Long.  $3\frac{1}{2}$  lin.

*Hab.* Colombia: a single specimen in my collection.

Head scarcely longer than broad, triangular; antennæ slender, filiform, the second joint short, ovate, the third one half longer than the second, the fourth as long as the preceding two united. Thorax nearly one half broader than long; sides parallel and sinuate from the base to beyond the middle; upper surface transversely convex, not foveolate. Elytra ovate, dilated posteriorly, convex, distinctly punctured; the entire limb of each elytron narrowly edged with black.

11. *DIABROTICA NIGROLIMBATA*. Elongata, postice vix ampliata, convexa, nigra, nitida, antennis basi sordide flavis; abdomine thoraceque flavis, hoc lævi; elytris sat crebre punctatis, flavis, nigro limbatis. Long.  $2\frac{2}{3}$  lin.

*Hab.* Paine; Muzo.

Head scarcely longer than broad, triangular; vertex shining impunctate; front impressed above the encarpæ with a large fovea; encarpæ ill-defined; carina linear; antennæ filiform, the second and third joints short, the latter nearly one half longer than the former, less than half the length of the fourth; three lower joints obscure flavous, stained above with piceous. Thorax nearly one fourth broader than long; sides straight and parallel, slightly converging at the apex; disk shining, impunctate. Elytra subelongate, broader than the thorax, very slightly dilated from the base towards the apex, the latter broadly rounded; above convex, closely and distinctly punctured.

**E. Elytra with the basal margin and a narrow curved line below the middle cyaneous.**

12. *DIABROTICA ARCUATA*, Baly, *Ann. Nat. Hist.* 3 ser. iv. 1859, p. 271.

*Hab.* Bogota; Magdalena River.

F. Elytra flavous, with a black or dark metallic blue annulus on the anterior disk and a second below the middle, the latter usually incomplete.

13. *DIABROTICA INÆQUALIS*. Elongato-ovata, postice ampliata, convexa, pallide fulva, nitida; postpectore, tibiisque nigris; capite nigro-æneo; antennis nigris, articulis ultimis tribus (ultimi apice excepto) albidis; thorace fulvo, late excavato, trifoveolato; elytris oblongis, postice paullo ampliatis, leviter rugulosis, tenuiter punctatis, subtiliter elevato-vittatis, spatiis inter vittas obsolete sulcatis, costis duabus infra humerum magis fortiter elevatis, interspatio inter illas costas magis profunde sulcato; nitido-flavis; utrisque vitta brevi basali, communi, altera curvata, super callum humeralem posita, fasciaque brevi arcuata, medio interrupta, inter medium et apicem sita, viridi-æneis. Long.  $3\frac{1}{4}$  lin.

*Hab.* Magdalena River.

Head not longer than broad, trigonate; mouth and antennæ black, the latter filiform, the third joint one half longer than the second, the fourth equal in length to the previous two united; four lower joints piceous, stained above with black, the three outer joints, the apex of the upper one excepted, pale yellowish white. Thorax scarcely one half broader than long; sides parallel and sinuate from the base to beyond the middle, thence rounded and converging to the apex; disk shining; hind disk broadly excavated, more deeply foveolate on either side and at the base. Elytra oblong, dilated posteriorly, convex, faintly wrinkled; each elytron with six or seven slightly raised vittæ, which are rendered less distinct owing to the irregular wrinkles of the whole surface; the spaces between the costæ subsulcate; two costæ below the humeral callus are more strongly raised than the rest, the space between them being more deeply sulcate; a short vitta at the base of the suture, another, curved, on the humeral callus, together with a short, narrow, curved fascia, interrupted in the medial line, placed between the middle and apex, bright metallic green.

The wrinkled elytra, together with the black tibiæ and tarsi, will at once distinguish the present species from most of its allies. It is probable that in some specimens the basal metallic markings are prolonged and confluent, forming a regular annulus, as in *D. biannularis*. It is closely allied to *D. Haroldi*.

14. *DIABROTICA HAROLDI*. Oblongo-elongata, postice paullo ampliata, fulva, nitida; postpectore, tibiis, tarsis capiteque nigris; antennis

apice sordide albidis, basi piceis; thorace quam longiori vix latiori, disco excavato, distincte bifoveolato; scutello piceo; elytris lævibus crebre punctatis, utrisque annulo subbasali lineaque arcuata pone medium, nigro-cyaneis. Long.  $3\frac{1}{2}$  lin.

*Hab.* Colombia.

Head not longer than broad, triangular; antennæ filiform, the second joint short, the third one half longer than the second, the fourth equal in length to the preceding two united. Thorax scarcely broader than long; sides parallel and slightly sinuate from the base to beyond the middle, thence slightly converging to the apex; disk broadly excavated, distinctly bifoveolate. Elytra narrowly oblong, moderately convex, smooth, closely punctured.

15. *DIABROTICA BIANNULARIS*, *Harold, Coleopt. Hefte, xiii.* p. 91.

*Hab.* Colombia; also Mexico and Guatemala.

The third joint of the antenna is quite one half longer than the second; the apical joint in the Colombian specimens is scarcely darker than the preceding ones. The pale tibiæ separate this species from *D. Haroldi*.

G. Elytra flavous or fulvous, with irregular black markings, sometimes almost entirely flavous.

16. *DIABROTICA TARSALIS*, *Harold, Coleopt. Hefte, xiii.* 1875, p. 92.

*Hab.* Bogota (*Steinheil*); Magdalena River: my collection.

This species varies greatly in the pattern of its elytra; in some specimens they are fulvous, with small irregular black markings.

H. Elytra green or yellowish green, immaculate, or with black, piceous, or flavous markings.

17. *DIABROTICA 10-PUNCTATA*, *Latr. Voy. Humb. ii.* 1833, p. 21, t. 39. fig. 9.

*Hab.* Paine; Fusagasuga; La Luzula; Eastern Colombia (*Winkler*). Magdalena River; Bogota.

18. *DIABROTICA PLACIDA*. Ovata, postice paullo ampliata, flavo-viridis; scutello, capite, pectore pedibusque nigris, abdomine flavo; thorace subquadrato, lævi; elytris tenuiter crebre punctatis. Long. 3 lin.

*Hab.* Ubaque, La Pavos; Rio Negro.

Head triangular, not longer than broad; vertex impressed on either side with very fine transverse strigæ; front just above the encarpæ with a deep fovea; encarpæ well defined, trigonate, contiguous; lower portion of clypeus with a transverse ridge, from the upper edge of which an ill-defined, narrowly wedge-shaped carina extends upwards to the encarpæ; labrum large; antennæ nearly equal to the body in length, filiform, the second and third joints short, nearly equal, the fourth longer than the preceding two united. Thorax about one fifth broader than long; sides parallel and distinctly sinuate from the base to beyond the middle, slightly dilated and rounded anteriorly, converging near the apex; disk smooth and shining, nearly impunctate. Elytra oval, dilated posteriorly, convex, rather closely and distinctly punctured, the interspaces granulose.

This species must stand close to *D. 10-punctata*, Latr. It is rather smaller, the third joint of the antenna is shorter, and the elytra are immaculate.

19. *DIABROTICA SUBSULCATA*, Baly, *Trans. Ent. Soc.* 3 ser. ii. 1865, p. 351.

*Hab.* Colombia, Bogota.

20. *DIABROTICA BIPUSTULATA*. Oblongo-ovata, postice paullo ampliata, convexa; prasina, nitida; ore, antennis, abdomine, tibiis et tarsis anticis quatuor, pedibusque posticis totis, sordide fulvis; thorace bifevolutato; elytris crebre punctatis, leviter sulcato-vittatis; utrisque pustula transversa, vix pone medium oblique posita, apiceque extremo fulvis. Long. 3 lin.

*Hab.* Venezuela: my collection.

Head subrotundate; vertex impressed with a deep longitudinal fovea; second and third joints of antennæ very short, equal, basal joint pale green. Thorax distinctly broader than long; sides parallel and slightly sinuate from the base to beyond the middle, thence obliquely converging towards the apex; disk smooth, impressed just behind the middle with a shallow semilunate excavation, deeper at either end, and there forming a distinct fovea. Elytra oblong, slightly dilated posteriorly; convex, each elytron with five or six faintly impressed longitudinal sulcations.

21. *DIABROTICA LEBASII*. Anguste ovata, postice ampliata, convexa, pallide piceo-fulva; scutello, oculis antennarumque articulis septimo

ad nonum ultimoque nigris; thorace bifoveolato; elytris crebre punctatis, limbo externo anguste flavo. Long.  $3\frac{1}{4}$  lin.

Var. A. Antennarum articulo decimo nigro.

Mas. Antennarum articulis 3-5 paullo incrassatis.

*Hab.* Colombia.

Head rather longer than broad, and somewhat wedge-shaped; antennæ filiform, the third to the fifth joints obsoletely thickened in the male, second and third very short, nearly equal, the fourth longer than the preceding two united. Thorax about one third broader than long; sides parallel and slightly sinuate from the base to beyond the middle, thence converging to the apex; disk impressed with two distinct foveæ. Elytra oblong, gradually dilated towards the apex, closely punctured.

22. *DIABROTICA AMABILIS*. Elongato-ovata, pallide prasina, nitida; capite, metapectore, tibiis tarsisque nigris; antennis sordide fulvis, articulo basali prasino; thorace subquadrato, dorso bifoveolato; elytris tenuissime subcrebre punctatis. Long.  $2\frac{1}{2}$  lin.

Var. A. Antennis piceis.

*Hab.* Magdalena River: my collection. Var. A. Coper: coll. H. Steinheil.

Clypeus clothed with a few silky hairs; antennæ filiform, nearly equal to the body in length, second and third joints very short, equal, the fourth as long as the two preceding united. Thorax subquadrate; sides straight and parallel, converging at the apex; disk impressed on either side with a deep fovea. Elytra finely but distinctly punctured, the punctures piceous, not closely crowded, nearly obsolete at the apex.

In var. A the whole colouring of the insect is darker in all its parts than in the type.

23. *DIABROTICA SIMULANS*. Anguste ovata, postice paullo ampliata, convexa, nitida, sordide flava, viridi tincta; metasterno, tibiis, tarsis, scutello capiteque nigris, antennis pallide piceis; thorace quam longiori paullo latiori, disco medio obsolete transversim excavato, leviter bifoveolato; elytris tenuiter punctatis. Long.  $2\frac{2}{3}$  lin.

*Hab.* Eastern Colombia (*Winkler*).

Head longer than broad, wedge-shaped; vertex impunctate; front impressed above the encarpæ with a deep fovea; encarpæ contiguous, subpyriform; carina raised, linear; clypeus transversely excavated on either side; antennæ filiform, the second and

third joints short, equal, the fourth longer than the preceding two united; the three lower joints, together with the upper two, piceo-fulvous, the rest pale piceous. Thorax rather broader than long; sides parallel, sinuate behind the middle, converging at the apex; disk smooth, impunctate, obsoletely excavated transversely across the middle, impressed on either side with a shallow fovea. Elytra oblong, dilated posteriorly, convex, faintly depressed below the basilar space, minutely punctured.

This insect may possibly be only a variety of the preceding species, in which the thorax is less deeply excavated.

24. *DIABROTICA LABIATA*. Anguste ovata, pallide prasina, nitida; capite femoribusque viridi-flavis; tibiis, tarsis, antennisque piceo-fulvis, harum articulo basali prasino; metapectore labroque nigris, scutello piceo; thorace quam longiori paullo latiori, utrinque leviter bifoveolato; elytris sat crebre, tenuiter punctatis. Long.  $2\frac{5}{8}$  lin.

*Hab.* Cartago.

Carina distinct; front impressed with a deep fovea; second and third joints of antennæ short, the third slightly longer than the second, scarcely more than half the length of the fourth. Thorax rather broader than long; sides sinuate and parallel from their base to beyond the middle, thence obliquely converging to the apex, the anterior angle slightly excurved, obtuse, the hinder one acute; disk smooth and shining, impressed on either side with a shallow fovea. Elytra oblong-ovate, slightly impressed below the basilar space, finely punctured.

25. *DIABROTICA VIRESCENS*. Anguste elongato-ovata, convexa, postice vix ampliata, pallide flavo-virescens, nitida; tibiis piceo-tinctis, tarsis piceis; capite sordide flavo, antennis piceis; thorace lævi, pallide virescente, utrinque sat profunde foveolato; elytris crebre rugoso-punctatis, obsolete elevato-costatis, sordide flavis; utrisque vitta lata suffusa a paullo infra basin ad apicem extensa, viridi, linea suturali, alteraque submarginali, hac ante apicem abbreviata, piceis. Long. 2 lin.

*Hab.* Colombia, without precise locality: my collection.

Head scarcely longer than broad, triangular, eyes large, black; vertex smooth, impunctate; front impressed just above the encarpæ with a distinct fovea; encarpæ thickened, contiguous; carina raised, gradually narrowed towards the apex; antennæ moderately robust, filiform, the second and third joints very short, equal, the fourth more than equal in length to the two preceding

united. Thorax subquadrate; sides rather broadly margined, parallel and obsoletely sinuate from the base to beyond the middle, thence slightly and obliquely converging to the apex; surface impunctate, middle disk flattened, impressed on either side with a deep fovea. Elytra broader than the thorax, oblong-ovate, slightly dilated posteriorly, convex, closely rugose-punctate; each elytron with four or five indistinctly raised longitudinal costæ.

26. *DIABROTICA INCONSTANS*. Anguste oblongo-ovata, postice paullo ampliata, prasina, nitida; scutello, tibiis tarsisque piceis; ore nigro; antennis piceo-fulvis extrorsum infuscatis; thorace lævi, bifoveolato; elytris sat crebre et fortiter punctatis, obsolete longitudinaliter sulcatis; plagis suffusis duabus, una infra basin, altera pone medium, flavis, plus minusve piceo maculatis. Long.  $2\frac{1}{2}$  lin.

*Hab.* Manizales, Ubaque; Oceana (*Landolt*); Magdalena River; also Nicaragua and Mexico.

Head not longer than broad, triangular; antennæ filiform, the second and third joints short, nearly equal, the latter being only slightly longer than the former; fourth much longer than the two united. Thorax one half broader than long; sides nearly straight and parallel from the base to just beyond the middle, thence obliquely converging to the apex; upper surface minutely and remotely punctured; disk bifoveolate. Elytra oblong, slightly dilated posteriorly, convex, strongly punctured; disk of each elytron with four or five broad shallow longitudinal sulcations, the outer one more deeply excavated than the rest; the flavous patches are ill-defined and vary greatly in extent, sometimes covering nearly the whole surface of the disk; in some specimens also the outer limb is edged with flavous; the piceous markings vary equally with the patches themselves, sometimes being entirely obsolete.

Very closely allied to *D. porracea*, Harold; possibly a local form of that species.

27. *DIABROTICA ORNATULA*. Elongata, pallide prasina, pectore antennisque (harum articulo basali excepto) pallide piceis, femoribus posticis basi, metasterno abdomineque flavis; thorace lævi, tenuiter punctato, bifoveolato; elytris crebre punctatis, elevato-vittatis, basi pustulaque subapicali flavis; fascia basali extrorsum abbreviata, et utrinque maculis duabus transversis, una prope medium, alteraque super pustulam flavam positis, piceis aut rufo-piceis. Long.  $2\frac{1}{2}$  lin.

Var. A. Elytrorum maculis plus minusve obsoletis.

*Hab.* Magdalena River; Muzo; Medellin: my collection. Amalfi: collection of H. Steinheil. Also Mexico, New Granada, Ecuador, and the Amazons.

Antennæ filiform, second and third joints of antennæ very short, equal, the fourth nearly as long as the three basal joints united. Thorax subquadrate; sides parallel, very slightly sinuate, slightly converging at the apex; disk very minutely but not closely punctured, impressed on either side with a large deep fovea. Elytra narrowly oblong, closely punctured, each with four or five raised longitudinal vittæ, obsolete at base and apex, their interspaces concave.

Very close to *D. inconstans*, agreeing in the sculpturing of the elytra, but differing in the coloration, which in the present species is fairly constant. The basal fascia is in some specimens divided into two patches, one on each elytron.

28. *DIABROTICA MUTABILIS*. Anguste oblonga, postice vix ampliata, convexa, prasina, nitida; abdomine flavo; capite, scutello pectoreque nigris, tibiis tarsisque piceo-nigris; antennis piceis, articulis ultimis tribus sordide fulvis; thorace quam longiori paullo latiori, dorso obsolete bifoveolato; elytris oblongis, sat crebre punctatis, basi fasciæque vix pone medium posita, nigris; disco pone fasciam interdum fulvo tineto.

Long. 3 lin.

*Mas.* Antennis magis robustis, articulis intermediis paullo incrassatis.

*Fœm.* Antennis gracilibus, filiformibus.

Var. A. Elytrorum plaga subbasali alteraque pone medium flavo-fulvis, tibiis fulvis.

Var. B. Elytris totis prasinis.

Var. C. Elytris flavis, prasino limbatis.

*Hab.* Medellin, Magdalena River, Bogota. Var. C. Caracas (*Thieme*). Venezuela.

Head scarcely longer than broad, subrotundate; clypeus with a longitudinal ridge; front impressed with a deep fovea; second and third joints of antennæ short, equal. Thorax broader than long; sides parallel and slightly sinuate from the base to beyond the middle, thence obliquely converging to the apex; upper surface nearly impunctate, transversely convex, flattened on the disk, obsoletely bifoveolate. Elytra oblong, convex, rather coarsely punctured; humeral callus with a short, ill-defined longitudinal ridge.

29. *DIABROTICA GEMMINGERI*. Anguste oblonga, postice paullo ampliata, convexa, læte viridis, nitida; abdomine flavo; pectore, femoribus apice, tibiis, tarsis, scutello capiteque nigris; antennarum articulis

duobus penultimis albidis; thorace bifoveolato, elytris tenuissime punctatis, fascia lata basali, alteraque vix pone medium, extrorsum abbreviatis, nigris. Long.  $2\frac{2}{3}$  lin.

*Hab.* La Pavas; Fusagasuga.

Very similar to *D. mutabilis*; elytra rather more finely punctured; the antennæ in the female (the only sex known) black, the ninth and tenth joints white.

30. *DIABROTICA FORMOSA*. Anguste ovata, postice vix ampliata, prasina, nitida; capite, scutello, pectore, tibiis tarsisque nigris; coxis flavis; antennarum articulo basali prasino, articulis antepenultimo et penultimo albidis; thorace bifoveolato, angulis anticis discique maculis flavis; elytris distincte punctatis, plaga magna basali, communi, fere ad marginem externum extensa, alteraque subrotundata pone medium, aurantiaceis; macula communi basali, secunda super callum humeralem tertiaque maculæ aurantiacæ medio positis, brunneis. Long. 3 lin.

*Hab.* Venezuela, a single specimen.

Head longer than broad, triangular; antennæ slender, second and third joints very short, nearly equal, the fourth as long as the preceding two united; basal joint pale green, its apex, together with the following three joints, piceous, the fifth to the eighth together with the apical one black, the ninth and tenth white. Thorax one half broader than long; sides parallel and sinuate from the base to beyond the middle, thence converging towards the apex; upper surface very minutely punctured, very remotely punctured on the disk, rather deeply bifoveolate; on the hinder disk is a third, very small, fovea. Elytra distinctly punctured, impressed below the humeral callus with an ill-defined longitudinal sulcation.

31. *DIABROTICA VIRIDI-PUSTULATA*. Anguste oblonga, postice vix ampliata; viridis, nitida; postpectore, pedibus (coxis femoribusque basi exceptis), capite scutelloque nigris; thorace transverso-quadrato, lævi, utrinque foveolato; elytris crebre punctatis, disco exteriori obsolete elevato-vittatis, inter vittas longitudinaliter sulcatis, nigris, plaga magna prope medium, utrinque vix abbreviata, maculaque subapicali, subrotundata, viridibus. Long.  $2\frac{1}{2}$  lin.

*Hab.* Coper: a single specimen in coll. Steinheil.

Front impressed with a deep fovea; encarpæ transverse, contiguous; carina elevated, linear; antennæ filiform; second and third joints short, the third nearly one half longer than the second, less than half the length of the fourth; eight lower joints black (*the three upper joints wanting*). Thorax transverse-quad-

rate; sides parallel, slightly sinuate, very slightly and obtusely angled before the middle, thence slightly converging to the apex, the anterior angles obtuse; disk impressed on either side with a large shallow fovea. Elytra oblong, scarcely dilated posteriorly, granulose, closely punctured; outer disk with three or four obsolete thickened vittæ, the spaces between longitudinally concave, the interspace below the humeral callus more deeply excavated than the others; the anterior green patch forms a broad medial fascia, abbreviated on the extreme lateral and sutural margins.

32. *DIABROTICA CHAPUISI*. Anguste oblonga, postice paullo ampliata, viridis, nitida; postpectore, pedibus, coxis, femoribusque (his basi exceptis), capite scutelloque nigris; thorace subquadrato, lævi, utrinque obsolete foveolato; elytris crebre punctatis, infra callum humeralem breviter longitudinaliter sulcatis; nigris, fascia communi prope medium, ad limbum externum abbreviata, apiceque viridibus. Long.  $2\frac{1}{2}$  lin.

*Hab.* Paine: unique in the collection of H. Steinheil.

Front impressed with a deep fovea; carina raised but not well defined; antennæ filiform, black, the basal joint piceous beneath; second and third joints short, nearly equal; fourth longer than the preceding two united. Thorax slightly broader than long; sides straight and parallel, indistinctly angled before the middle, thence obliquely converging to the apex, apical angles obliquely truncate; upper surface smooth and shining, faintly impressed on either side with a very shallow ill-defined fovea. Elytra broader than the thorax, slightly increasing in width from the base towards the apex, closely punctured, interspaces granulose, longitudinally sulcate below the humeral callus.

33. *DIABROTICA SALLEI*. Elongato-ovata, convexa, nitida, subtus flava; prosterno prasino, scutello metasternoque nigris, hoc griseo sericeo, tibiis tarsisque piceis; supra prasina, capite rufo-piceo, antennis sordide fulvis; thorace lævi, utrinque fovea sat profunda impresso; elytris tenuiter subcrebre punctatis; utrisque limbo laterali, apice, maculis duabus infra basin, his transversim positis, fasciisque duabus, utrinque abbreviatis, una vix ante medium, altera inter medium et apicem, flavis. Long. 2 lin.

*Hab.* A single specimen from Colombia in H. Steinheil's collection; also Guatemala, my collection.

Front impressed just above the encarpæ with a large deep fovea; encarpæ thickened, transverse, contiguous; carina raised, well defined, narrowly elongate; antennæ filiform, the third joint about one fourth longer than the second, scarcely more

than half the length of the fourth; labrum dark piceous. Thorax more than one half broader than long; sides sinuate and parallel behind the middle, rounded just above the latter, thence converging to the apex; disk smooth, impunctate, impressed on either side with a deep fovea. Elytra broader than the thorax, oblong-ovate, slightly dilated from the base towards the apex, the latter broadly rounded; above moderately convex, faintly excavated below the basilar space, finely punctured; each elytron with the apex, the outer limb, and two spots placed transversely just below the base, yellow—one spot, rotundate, is placed between the humeral callus and the suture; the other wedge-shaped, covers the lower half of the humeral callus, its narrow apex extending upwards along the outer border of the callus and being sometimes confluent with the outer limb; in addition, on the disk of each elytron are two concolorous fasciæ abbreviated at either end, one just below the middle, the other half way between the middle and the apex.

34. *DIABROTICA HEXASPILOTA*. Elongato-ovata, pallide prasina; capite piceo-fulvo, metathorace antennisque (harum articulo basali prasino excepto) piceis; labro, tibiis tarsisque nigris; thorace transverso, utrinque leviter foveolato; elytris sat crebre punctatis, utrisque macula subbasali, super callum humeralem, piceo tineta, duabusque parvis juxta suturam, una prope medium, altera inter medium et apicem, flavis. Long.  $2\frac{1}{2}$  lin.

*Hab.* Ubaque.

Front impressed with a deep fovea; carina ill-defined; antennæ filiform, second and third joints short, the latter slightly longer than the former, much shorter than the fourth. Thorax scarcely one fourth broader than long; sides parallel from the base to beyond the middle, thence obliquely converging to the apex, the anterior angles obtuse, the hinder ones acute; disk smooth and shining, impressed on either side with a shallow fovea. Elytra oblong-ovate, minutely but rather closely punctured.

35. *DIABROTICA VIRGINELLA*. Elongato-ovata, convexa, prasina, nitida; capite, scutello, tibiis tarsisque nigris; abdomine flavo; thorace lævi, disci medio excavato, obsolete bifoveolato; elytris distincte subcrebre punctatis, linea suturali vittaque submarginali, ante apicem abbreviata, basi linea brevi cum connexa, nigris. Long. 3 lin.

*Hab.* Venezuela: a single specimen from the late Mr. Saunders's collection.

Head longer than broad, triangular; basal joint of antennæ

piceous beneath (the rest of the joints broken off). Thorax scarcely one half broader than long; sides parallel and nearly straight from the base to beyond the middle; upper surface smooth, excavated on the middle disk, faintly bifoveolate. Elytra oblong, distinctly punctured.

I. Elytra metallic green, their apices rufo-piceous.

36. *DIABROTICA SUFFUSA*. Elongata, convexa, piceo-fulva, nitida; tibiis, tarsis, oculis antennisque nigris; thorace lævi; elytris parallelis, crebre subfortiter punctatis, sordide viridi-cyaneis, limbo laterali angusto apiceque pallide rufo-piceis. Long. 4 lin.

Var. A. Elytris fere totis rufo-piceis.

*Hab.* Fusagasuga; Oceana (*Landolt*).

Head not longer than broad, triangular; eyes very large, prominent; vertex smooth, impunctate; encarpæ contiguous, subpyriform; carina short, strongly raised, linear, terminating below on a strongly raised transverse ridge, which extends across the lower part of the clypeus. Antennæ filiform, in the male equal to the body in length, shorter in the other sex, the second joint short, obovate, the third nearly twice the length of the second, scarcely more than half the length of the fourth, the remaining joints each nearly equal in length to the fourth; the basal one piceo-fulvous, the rest black. Thorax twice as broad as long; sides straight, diverging from the base to beyond the middle, rounded and converging at the apex; disk impunctate, the middle disk flattened. Elytra broader than the thorax, parallel; above convex, closely and rather strongly punctured.

The metallic colour on the elytra in this species varies greatly in extent: in some specimens it covers nearly the whole surface, in others it is scarcely visible, except at the extreme base.

J. Body ovate, dilated posteriorly, strongly convex; elytra black, a curved fascia at the base, sometimes interrupted; a medial fascia and a subapical spot fulvous; these markings slightly raised above the surface of the disk.

37. *DIABROTICA FULVO-SIGNATA*, *Baly*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. iii. 1879, p. 77.

*Hab.* Colombia; also Guatemala.